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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/607,514	06/28/2000	Li Gong	83000.930C/P2136/AES	1326

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EXAMINER

MEISLAHN, DOUGLAS J

ART UNIT	PAPER NUMBER
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2137

DATE MAILED: 04/20/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/607,514

Applicant(s)

GONG, LI

Examiner

Douglas J. Meislahn

Art Unit

2137

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment filed 31 January 2004 that amended the specification and claim 1 while adding claims 29-31.

Response to Arguments

2. Applicant's arguments filed 31 January 2004 have been fully considered but they are not persuasive. The examiner does not disagree with applicant's description of Griffin, given in the paragraph spanning pages 12 and 13. The characterization of Schneier, however, is overly narrow. As indicated by the applicant, Schneier teaches signature techniques for digital data. This means that the methods taught by Schneier are applicable to all digital data. A serialized live object is digital data. As such, digital signatures, a basic of information security, are applicable to applicant's snapshots.

3. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

4. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in

the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Schneier clearly shows that the use of digital signatures can be used to ensure that data has not been altered, a desirable outcome.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-7, 11-17, 22, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griffin (5893077) in view of Schneier (*Applied Cryptography*).

In figure 9, Griffin shows the serialization of an object (element 387). This meets the limitation of taking a snapshot by serializing the state of a live object. The object has necessarily been instantiated in a runtime environment. Griffin does not say that a signature is associated with the serialized object or that the association between the two is maintained. On page 39, Schneier shows a digital signature that is made by encrypting a message-to-be-authenticated with a private key. Decryption using the corresponding public key not only retrieves the data, but also indicates that the data was encrypted by the private key's holder. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the serialized object of Griffin to generate the signature so that the signature could be used as a proof against the object.

With respect to claim 2, Schneier's signature method includes verification. Deserialization, shown in element 508 of figure 11A in Griffin, meets the limitation of constructing a new object using said snapshot. The snapshot is stored in an event object file that reads on applicant's another object, and claim 3 is thus rendered obvious. Claim 4 is obvious because signatures such as those described by Schneier are not valid with objects that have been altered after signing. Claim 5 is rendered obvious by Schneier's teaching of signing data. Claims six and seven are obvious because multiple signatures give multiple levels of security. Claims 11-17 are computer code to perform the method of claims 1-7 and is rendered obvious for largely the same reasons. With respect to the arrays in claim 29, arrays are fundamental to structured data. The event object file is structured data.

7. Claims 23-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Griffin and Schneier as applied to claims 1-4 above, and further in view of Fischer.

Griffin and Schneier teach serializing and storing objects along with signatures that authenticate the serialized objects. They do not say that the program code that performs these functions is an object. In lines 40-50 of column 2, Fischer teaches the advantage of object-oriented programming, saying that it is polymorphic. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement modules to reap the rewards of polymorphism. At some point this would require the snapshot and signature to be stored within the processing object.

8. Claims 8-10, 18-21, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griffin and Schneier as applied to claims 1 and 11 and further in view of Chaplin (5315655).

Griffin and Schneier display a system of signing serialized objects. Schneier teaches encryption of data as a way to protect it on page 28. Encryption keys are inherently generated prior to encryption. They do not say that the leftover unencrypted objects are deleted. Figure 7 of Chaplin clearly shows the encryption of data in part 704 and then the deletion of the unencrypted copy of the data in part 705. Chaplin also teaches decryption of data in figure 8. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to delete unencrypted copies of the objects after the objects had been encrypted. Unencrypted copies could otherwise be used to circumvent the protection provided by the encryption.

9. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griffin in view of Fischer and Schneier as applied to claim 22 above, and further in view of Chaplin.

Griffin in view of Fischer and Schneier shows a system of signing only the critical objects that make up a larger object where the signature is made from the critical objects. As shown by element 114 of figure 10, Fischer's system can encrypt the cells and the digital signatures. Schneier also teaches encryption on page 28. Encryption keys are inherently generated prior to encryption. Fischer does not say that the leftover unencrypted objects are deleted. Figure 7 of Chaplin clearly shows the encryption of data in part 704 and then the deletion of the unencrypted copy of the data in part 705.

Chaplin also teaches decryption of data in figure 8. Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to delete unencrypted copies of the critical objects after the objects had been encrypted. Unencrypted copies could otherwise be used to circumvent the protection provided by the encryption.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas J. Meislahn whose telephone number is (703) 305-1338. The examiner can normally be reached on between 9 AM and 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory A. Morse can be reached on (703) 308-4789. The fax phone

number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Douglas J. Meislahn
Examiner
Art Unit 2137

DJM